

Patent claims

- 5 1. A method for pulse width modulated control of a plurality of load elements, the load elements being controlled in time staggered manner with respect to each other, **characterized in that**,
- 10 - the load elements are controlled by a common control unit with a common system clock in phase staggered manner, and
- for each load element an initial value and a final value is predetermined,
- 15 - the initial values of the load elements diverge from each other,
- the final values of the load elements are determined according to the pulse-break ratio and
- 20 - each load element is supplied with current for the period of time between the respective initial and final value.
- 25 2. A method according to claim 1, **characterized in that** the load elements preferably are ohm resistive load elements in an electrically independent load circuit and are supplied from a common supply line, in particular from a motor vehicle supply system.
- 30 3. A method according to claim 1, **characterized in that** a common system clock in a common counter is counted up to a predetermined counter final value.
- 35 4. A method according to one of the preceding claims, **characterized in that** for different operating situations different phase shifts of the individual

load elements with respect each other are predetermined.

5 5. A method according to one of the preceding claims,
characterized in that at least one of the following
parameters is determined:

- number of load elements to be currently controlled, or
- 10 - pulse width of the load elements to be currently
controlled or
- electrical power input or size proportional thereto of
the load elements to be currently controlled with
respect to each other or
- 15 - the harmonic content in the common supply line timed
over the control of all load elements.

20 6. A method according to one of the preceding claims,
characterized in that illuminants, in particular lamps
or LEDs, preferably in a motor vehicle, are
controlled.

25 7. A control circuit for executing the method according
to one of the preceding claims consisting of

- a common system timer and
- a storage region for each load element, in which
the pulse width and the phase position of the
respective load element are stored.

30 8. A control circuit according to claim 7, **characterized
in that**

- 35 - initial value and final value for the phase
staggered pulse width modulated control are
stored,

- a common counter, which counts the system clock up to a predetermined counter final value,
- for each load element a storage region, in which initial value and final value are stored for the phase staggered pulse width modulated control and
- for each load element a comparator and a switch, which compares the counter state with the initial and final value and dependent therefrom controls the switch in the electric circuit to the load element.

9. A circuit arrangement according to claim 8, characterized in that a reset-input is provided at the counter, by which for all load elements the control can be jointly synchronized by resetting and restarting the counter.

10. A circuit arrangement according to one of claims 7 to 10 for executing a method according to claims 5 or 6, characterized in that

- a storage region is provided, in which for different operating situations different phase positions of the individual load elements with respect to each other are stored and
- means for recognizing the current operating situation and selection of the phase position assigned to the current operating situation are provided.

11. A circuit arrangement according to claim 10, characterized in that a storage region is provided, in which a plurality of different phase positions of the individual load elements with respect to each other can be programmed via an interface.

12.A circuit arrangement according to one of the preceding claims, characterized in that a measurement arrangement is provided in the common supply line for detecting the harmonic content.

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